

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 September 2003 (12.09.2003)

PCT

(10) International Publication Number
WO 03/074604 A1

(51) International Patent Classification⁷: C08L 3/00,
C08J 3/00, C08K 5/00

(21) International Application Number: PCT/US03/05661

(22) International Filing Date: 26 February 2003 (26.02.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/360,324 28 February 2002 (28.02.2002) US

(71) Applicant (for all designated States except US):
BOARD OF TRUSTEES OF THE UNIVERSITY
OF ARKANSAS [US/US]; 2401 North University Ave-
nue, Little Rock, AR 72207 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): WANG, Ya-Jane

[US/US]: 2490 North Worthington Way, Fayetteville, AR
72703 (US). SUN, Zhenhua [CN/US]: 2338 East Oaks
Drive #10, Fayetteville, Arkansas 72703 (US). LIU, Wan-
jun [CN/US]: 1540 West Nettleship Street #9, Fayetteville,
Arkansas 72701 (US).

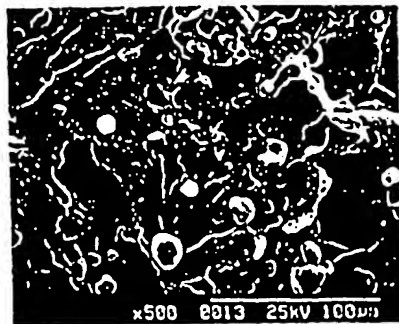
(74) Agent: BENNETT, Allen, E.; Head Johnson & Kachigian,
228 West 17th Place, Tulsa, Oklahoma 74119 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SC, SD, SE, SG,
SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
VN, YU, ZA, ZW.

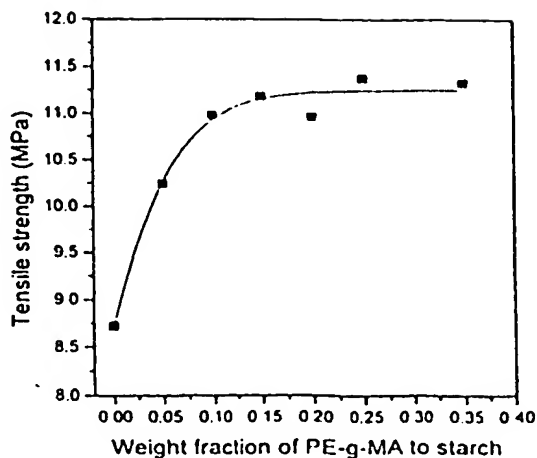
(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW).

[Continued on next page]

(54) Title: BIODEGRADABLE MATERIALS FROM STARCH-GRAFTED POLYMERS



(57) Abstract: Granular starch is added to a polymer in order to decrease the cost of the polymer derivative. Use of granular starch also makes the derivative more biodegradable. The polymer blend has very similar mechanical properties to pure polymer. Furthermore, unlike other starch/polyethylene mixtures, glycerol is not added to the mixture. This reduces the water absorbency of the final product. The polymer and starch are blended together in the presence of an interfacial compatibilizer that binds the two components together.



BEST AVAILABLE COPY